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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,044	01/25/2002	Xiaodong Luo	004320.P054	5758

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EXAMINER

VIEAUX, GARY

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/055,044	Applicant(s) LUO ET AL.	
	Examiner Gary C. Vieaux	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 2, 5, 7, and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/25/02 and 7/8/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on the following dates are
5 in compliance with the provisions of 37 CFR 1.97 and are being considered by the
Examiner: January 25, 2002 and July 8, 2003.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)
10 because they include the following reference character(s) not mentioned in the
description: 109-3 and 109-N. Corrected drawing sheets in compliance with 37 CFR
1.121(d), or amendment to the specification to add the reference character(s) in the
description in compliance with 37 CFR 1.121(b) are required in reply to the Office action
to avoid abandonment of the application. Any amended replacement drawing sheet
15 should include all of the figures appearing on the immediate prior version of the sheet,
even if only one figure is being amended. Each drawing sheet submitted after the filing
date of an application must be labeled in the top margin as either "Replacement Sheet"
or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the
examiner, the applicant will be notified and informed of any required corrective action in
20 the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: the serial number of the referenced co-pending US patent application is incomplete, see p. 7 line 10.

5 Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

10 A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15 **Claims 1 and 6** are rejected under 35 U.S.C. 102(b) as being anticipated by Shimaya et al. (US 5,579,049.)

Regarding claims 1, Shimaya discloses a method of automatically controlling the exposure time and gain of an image sensor which comprises determining if a first image provided by said image sensor has an overall brightness that falls within a stable range
20 (col. 8 lines 18-27), if said brightness of said first image falls within said stable range, maintaining the exposure time and gain of said image sensor for capture of a subsequent second image (col. 8 lines 25-29), if said brightness of said first image falls outside of said stable range, then adjusting said exposure time downward by a first predetermined increment if said brightness is higher than said stable range, else
25 adjusting said exposure time upward by a second predetermined increment if said

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brightness is lower than said stable range, and determining if said adjustment of exposure time downward or upward is greater than a predetermined threshold, and if so, increasing said gain of said image sensor if said exposure time is adjusted downward, else decreasing said gain of said image sensor if said exposure time is

5 adjusted upward (col. 9 lines 1-52.)

Regarding claim 6, although the wording is different, the material is considered substantively equivalent to claim 1, as discussed above.

Claim Rejections - 35 USC § 103

10 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

15 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimaya et al. (US 5,579,049) in view of Shimizu et al. (US 5,386,231.)

20 Regarding claim 3, Shimaya discloses all of the limitations of claim 3 (please see the 102(b) rejection to claim 1 supra) except wherein said exposure time is measured as an exposure row count. However, Shimizu teaches exposure time measured using the exposure of rows as a measurable increment (col. 3 lines 36-49, col. 4 lines 11-17.) It would have been obvious to one of ordinary skill in the art at the time of the invention
25 to employ exposure time in rows as taught by with the method of Shimaya, so that

proper exposure is effected and controlled via a rolling shutter format, and results in a more stable output signal.

Regarding claim 4, Shimaya and Shimizu disclose all of the limitations of claim 3 (please see the 103(a) rejection to claim 3 supra) including wherein said first

5 predetermined increment and said second predetermined increment is one row (col. 3 lines 36-49, col. 4 lines 11-17.) It would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the exposure time by a single row as taught by Shimizu, with the method as taught by Shimaya, so that proper exposure is effected and controlled via a rolling shutter format, and results in a more stable output signal.

10 Regarding claims 8 and 9, although the wording is different, the material is considered substantively equivalent to claims 3 and 4, respectively, as discussed above.

Allowable Subject Matter

15 **Claims 2 and 7** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 2 and 7, the prior art is not found to teach or fairly suggest, in combination with the claims from which dependence is derived, controlling the exposure
20 time and gain of an image sensor including wherein said predetermined threshold for the adjustment of exposure time is substantially a magnitude of said stable range.

Claims 5 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 5 and 10, the prior art is not found to teach or fairly suggest, in combination with the claims from which dependence is derived, controlling the exposure time and gain of an image sensor including wherein the amount of increase of said gain is dependent upon the percentage decrease of exposure time and the amount of decrease of said gain is dependent upon the percentage increase of exposure time.

10

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakai et al. (US 6,768,511) discloses exposure and gain changes occurring outside of a stable range.

15

Mochizuki et al. (US 5,793,422) discloses exposure and gain control based on use of a stable range.

Shimuzi et al. (US 5,559,555) discloses exposure and gain control based on use of a stable range.

20

Shibuya et al. (US 5,986,705) discloses exposure and gain being adjusted in stepped increments.

Easwar (US 2003/0098914 A1) discloses scaling of exposure and gain when a predetermined threshold is exceeded.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary C. Vieaux whose telephone number is 571-272-

5 7318. The examiner can normally be reached on Monday - Friday, 8:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thai Q. Tran can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the
10 Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic
15 Business Center (EBC) at 866-217-9197 (toll-free).

Gary C. Vieaux
Examiner
Art Unit 2612

Gcv2



THAI TRAN
PRIMARY EXAMINER